UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY

EKR THERAPEUTICS, INC., Plaintiffs, v.	Civ. Action No. 07-1788 (KSH)
SUN PHARMACEUTICAL INDUSTRIES, LTD., Defendant.	**OPINION**

Katharine S. Hayden, U.S.D.J.

I. Background

A. The Present Dispute

This patent infringement suit arises under the Federal Food, Drug, and Cosmetic Act ("FD&C Act), and, more specifically, the Hatch-Waxman Amendments to that body of law. Plaintiff PDL Biopharma, Inc. ("PDL"), now substituted by EKR Therapeutics, Inc. ("EKR"),[1] brought suit against defendant Sun Pharmaceutical Industries, Ltd. ("Sun") for infringement of patent 5,164,405 ("the '405 patent"), of which the commercial embodiment is the branded product marketed as "Cardene® I.V." ("Cardene"). The '405 patent, issued on November 17, 1992, is entitled "Nicardipine Pharmaceutical Composition for Parenteral Administration," and will expire on November 17, 2009. Cardene is currently the only FDA-approved intravenous calcium channel blocker indicated for the treatment of hypertension where oral ingestion is not feasible or desirable.

[1] In March 2008, EKR purchased all rights, title, and interest in PDL's Cardene I.V. business, and was substituted for PDL in this civil action by Court-approved stipulation filed on December 12, 2008. (D.E. 180.) Accordingly, the Court herein will refer to the defendant as EKR for all purposes.

This action relates to Sun's filing of an Abbreviated New Drug Application ("ANDA") under Section 505(j) of the FD&C Act, 21 U.S.C. § 355(j) seeking U.S. Food and Drug Administration ("FDA") approval to market Sun's proposed ANDA product, "Injectable Nicardipine Hydrochloride" ("Sun's ANDA product"). On March 5, 2007, Sun wrote EKR a letter, purporting to serve as Notice of Certification for ANDA No. 78-405, as required under Sections 505(j)(2)(B)(i) and (ii) of the FD&C Act, codified at 21 U.S.C. § 355(j)(2)(B)(i) and (ii), and 21 C.F.R. § 314.95(c). In accordance with the FD&C Act, Sun made a certified statement pursuant to Section 505(j)(2)(A)(vii)(IV), 21 U.S.C. § 355(A)(vii)(IV) ("Paragraph IV"), that the manufacture, use, or sale of the product outlined in Sun's ANDA No. 78-405 would not infringe the '405 patent. Soon afterwards, on April 16, 2007, EKR filed this lawsuit against Sun, asserting one claim for patent infringement.

After EKR filed an amended complaint (D.E. 8), and the parties had embarked upon discovery (D.E. 16, 18, 40, 42), Sun moved for summary judgment of non-infringement on November 20, 2007 without first seeking leave of Magistrate Judge Shwartz. (D.E. 62.) The motion was denied without prejudice on November 26, 2007 for failure to obtain leave, and Sun was directed to submit a letter explaining why it moved for summary judgment before discovery was completed. (D.E. 64.) Sun's letter followed on November 30, 2007, setting forth that its chief reason for moving for summary judgment was that "time is of the essence" in this litigation due to the "unique" situation that "Sun expect[ed] to be awarded 180 days of marketing exclusivity" if Sun's ANDA was deemed non-infringing or if the '405 patent was ruled invalid. (D.E. 65.) Sun stated that because "any marketing exclusivity is lost after the patent expires, Sun must obtain a decision on the merits no later than May 17, 2009 to enjoy the full benefit of its marketing exclusivity." (*Id.*) Dating back to a July 2007 Rule 16 conference, Sun has contended

that EKR's "sole goal" is "delay [of] a final decision on the merits at all costs" in order to harm Sun's chances of any success on its ANDA product. (D.E. 183.) As late as the February 17, 2009 oral argument, Sun has consistently argued that its potential exclusive generic marketing period represents a "wasting asset" if a decision on the merits cannot be obtained in a timely fashion.

Based upon Sun's letter of December 3, 2007, Magistrate Judge Shwartz denied leave to file summary judgment motions but provided the requests could be renewed after resolution of outstanding discovery issues pending at that time. (D.E. 66.) On March 24, 2008, Magistrate Judge Shwartz ruled that despite the ongoing nature of discovery, "combined motion practice addressing the construction of the single claim and defendant's non-infringement motion" could go forward. (D.E. 79.) Thereafter, Sun moved for summary judgment of non-infringement of the '405 patent (D.E. 121), and EKR responded with its opposition papers and cross-motion for summary judgment of infringement. (D.E. 135.)

On January 15, 2009, the Court held a status conference, which yielded an agreement to hold oral argument on claim construction and each of the parties' summary judgment motions on February 17, 2009. The parties presented oral argument and chose not to call witnesses. The parties agree that a single claim term is at issue in the claim construction dispute: the meaning of "isotonic" in claims 1-4 of the '405 patent. Another claim term, "for parenteral administration," had originally been in dispute but Sun stipulated to EKR's proposed meaning at the January 15, 2009 status conference, such that parenteral would take the meaning provided by the '405 patent, encompassing both direct injection and by infusion via intravenous drip. (*See* '405 patent, Col. 2, ll. 39-40.)

B. The Broader Context

The type of patent infringement suit before the Court frequently surfaces when the underlying patent for a brand-name drug is approaching the expiration of its patent term. The Hatch-Waxman Amendments, as passed in the Drug Price Competition and Patent Term Restoration Act of 1984 (Pub. L. No. 98-417), amended the FD&C Act, creating § 505(j) of the FD&C Act, as codified in 21 U.S.C. § 355(j). Section 505(j) established the ANDA approval process, permitting lower-priced generic versions of FDA-approved innovator drugs to be approved and marketed to the public.

ANDA applicants must include in the ANDA a patent certification described in Section 505(j)(2)(A)(vii) of the FD&C Act. The ANDA certification must incorporate one of the following statements: (I) no patent information on the drug product that is the subject of the ANDA has been submitted to FDA; (II) that such patent has expired; (III) the date on which such patent expires; or (IV) that such patent is invalid or will not be infringed by the manufacture, use, or sale of the drug product for which the ANDA is submitted. EKR's lawsuit stems from Sun's certification under paragraph IV.

When making a paragraph IV certification, the ANDA applicant is required to provide notice of the paragraph IV certification to each patent owner listed in the certification and to the holder of the approved new drug application ("NDA") to which the ANDA related, in this case EKR. Submitting an ANDA for the same drug product claimed in a patent is an infringing act if the ANDA drug product—here Sun's product—is intended to be marketed before the expiration of the pertinent patent. Thus, the ANDA applicant may be sued for patent infringement once the patent holder is put on notice.

Critically, there is a 180-day marketing exclusivity incentive for generic manufacturers to be the first-in-time filers of ANDAs containing paragraph IV certifications challenging patents that are either: (1) invalid; (2) not infringed by the product that is the subject of the ANDA; or (3) are unenforceable. Not surprisingly, receipt of a paragraph IV certification will frequently precipitate a patent infringement suit against the ANDA filer by the patent owner.

The 180-day marketing exclusivity incentive springs from the Hatch-Waxman Amendments, and is currently housed in the FDA regulations. In the *Federal Register* of October 3, 1994 (59 F.R. 50338, 50367), FDA published the final rule implementing the patent and marketing exclusivity provisions of the Hatch-Waxman Amendments. The FDA regulation implementing section 505(j)(5)(B)(iv) of the Act provides:

> If an abbreviated new drug application contains a certification that a relevant patent is invalid, unenforceable, or will not be infringed and the application is for a generic copy of the same listed drug for which one or more substantially complete abbreviated new drug applications were previously submitted containing a certification that the same patent was invalid, unenforceable, or would not be infringed, *approval of the subsequent abbreviated new drug application will be made effective no sooner than 180 days* from whichever of the following dates is earlier:
>
> > (i) The date the applicant submitting the first application first commences commercial marketing of its drug product; or
> > (ii) *The date of a decision of the court holding the relevant patent invalid, unenforceable, or not infringed*.

21 C.F.R. 314.107(c) (emphases added). In order to prove the first ANDA filer's entitlement to the 180-day exclusivity period, the FDA requires that the first ANDA applicant submitting a paragraph IV certification *successfully* defend a patent infringement suit or prove the patent invalid. In practice, this ensures that only ANDA applicants who are truly non-infringing can obtain the exclusivity period.

Thus, in general, an ANDA applicant whose ANDA contains a paragraph IV certification is protected from competition from subsequent generic versions of the same drug product for 180

days after either the first marketing of the first applicant's drug or a decision of a court holding the patent that is the subject of the paragraph IV certification to be invalid or not infringed.

The litigation prompted by ANDA filers' paragraph IV certifications is significant in its frequency and potential rewards for generic ANDA applicants. Determining infringement involves a two-step process whereby the Court must first construe the claims and next determine whether every claim limitation—or its equivalent—is found in the accused device. *In re Gabapentin Patent Litig.*, 503 F.3d 1254, 1259 (Fed. Cir. 2007).

II. Standard of Review

Pursuant to Rule 56(c), summary judgment is appropriate when there is no genuine issue of material fact and the moving party is entitled to judgment as a matter of law. *Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986). A dispute about a material fact is genuine "if the evidence is such that a reasonable jury could return a verdict for the nonmoving party." *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986).

The court must view the facts and reasonable inferences drawn therefrom "in the light most favorable to the party opposing the motion." *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 587 (1986) (quoting *United States v. Diebold, Inc.*, 369 U.S. 654, 655 (1962) (per curiam)). The opposing party, however, must produce evidence upon which a reasonable fact finder could rely, *Celotex*, 477 U.S. at 324, and "do more than simply show that there is some metaphysical doubt as to material facts." *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 586 (1986). Thus, to survive summary judgment the nonmoving party must "make a showing sufficient to establish the existence of [every] element essential to that party's case, and on which that party will bear the burden of proof at trial." *Celotex*, 477 U.S. at 322.

III. Factual Background

The operative documents in this patent infringement action are the '405 patent itself and Sun's ANDA application. In support of their motions, the parties have submitted declarations appending excerpts of deposition testimony, correspondence, and other related documentary evidence. Because the patent claims alone vest the patent holder's right to exclude, they are set forth at the outset. *See Halliburton Energy Servs. v. M-I LLC*, 514 F.3d 1244, 1249 (Fed. Cir. 2008) ("Because claims delineate the patentee's right to exclude, the patent statute requires that the scope of the claims be sufficiently definite to inform the public of the bounds of the protected invention, *i.e.*, what subject matter is covered by the exclusive rights of the patent. Otherwise, competitors cannot avoid infringement, defeating the public notice function of patent claims.").

A. The '405 Patent's Claims at Issue

The '405 patent contains nine claims. (Col. 10, l. 35-Col. 12, l. 29.)

What is claimed is:

> 1. In a process for producing a stable pharmaceutical composition containing nicardipine hydrochloride suitable for parenteral administration and useful in the treatment of disease conditions which may be alleviated by the administration of calcium channel blocking agents, which process comprises admixing a therapeutically effective amount of nicardipine hydrochloride and a pharmaceutically acceptable aqueous vehicle comprising at least a major proportion of water, the improvement comprising:
>
> > (a) dissolving in an aqueous vehicle consisting essentially of water a physiologically and pharmaceutically acceptable buffer in an amount effective to maintain the pH of the pharmaceutical composition at about 3.0 to about 4.5, thereby forming a buffered solution; and
> > (b) adding to said buffered solution
> > at least 1 mg/ml of said therapeutically effective amount of nicardipine hydrochloride, and
> > a physiologically and pharmaceutically acceptable non-chloride compound selected from saccharides, including sorbitol, mannitol, dextrose and glucose, and non-saccharides, including polyethylene

glycol and glycerol, in an amount effective to render the pharmaceutical composition isotonic.

2. The process of claim 1 further comprising the step of terminally sterilizing said pharmaceutical composition by autoclaving.

3. A pharmaceutical composition suitable for parenteral administration to mammals and useful in the treatment of disease conditions which may be alleviated by the administration of calcium channel blocking agents, which composition comprises:

(a) a physiologically and pharmaceutically acceptable non-chloride compound selected from saccharides, including sorbitol, mannitol, dextrose and glucose, and non-saccharides, including polyethylene glycol and glycerol, in an amount effective to render the pharmaceutical composition isotonic;
(b) a physiologically and pharmaceutically acceptable buffer, selected from citrate, acetate, phosphate, and lactate buffers, in an amount effective to maintain the pH of the composition at about 3.0 to about 4.5;
(c) a pharmaceutically acceptable aqueous vehicle consisting essentially of water; and
(d) at least about 1 mg/ml nicardipine hydrochloride in solution herein.

4. A composition according to claim 3 wherein the therapeutically effective amount of nicardipine hydrochloride is from about 0.5 mg/ml to about 10 mg/ml of aqueous vehicle and the aqueous vehicle is water (water for injection) alone.

5. A composition according to claim 3 wherein the buffer is selected from citrate and acetate buffers.

6. A composition according to claim 3 wherein:

(a) the therapeutically effective amount of nicardipine hydrochloride is from about 1 mg/ml to about 2.5 mg/ml of aqueous vehicle;
(b) the non-chloride compound is a saccharide selected from sorbitol and mannitol used in an amount of about 48.0 to about 50.0 mg per ml of aqueous vehicle.
(c) the buffer is citrate used in an amount of about 0.002-0.003M; and
(d) the aqueous vehicle is water alone.

7. A composition according to claim 6 wherein the non-chloride compound is sorbitol.

8. A pharmaceutical composition suitable for parenteral administration useful in the treatment of cardiovascular and cerebrovascular conditions comprising:

(a) about 1.0 mg/ml of composition of nicardipine hydrochloride;
(b) about 48-50 mg/ml of sorbitol;
(c) an amount of citric acid monohydrate and sodium hydroxide sufficient to render the composition about 0.002-0.003M in citric acid monohydrate and having a pH of about 3.5-4.5; and
(d) sufficient water to make up 1 ml volume.

9. A pharmaceutical composition suitable for parenteral administration useful in the treatment of cardiovascular and cerebrovascular conditions comprising:

(a) about 2.5 mg/ml of composition of nicardipine HCl;
(b) about 48-50 mg/ml of composition of sorbitol;
(c) an amount of citric acid monohydrate sufficient to render the composition about 0.002-0.003M in citric acid monohydrate and having a pH of about 3.5-4.5; and
(d) sufficient water to make up 1 ml volume.

U.S. Patent No. 5,164,405 (claims section).

B. Sun's ANDA Nicardipine Product

In connection with its filing of an ANDA application, Sun filed its patent application (No. 11/598,746) ("the '746 application"), on November 14, 2006, entitled "Nicardipine Injection Composition," submitted to the Court as Exhibit 14 to the Robert B. Wilson Declaration ("RW Decl."). In filing its ANDA, Sun identified the "reference listed drug" as Cardene (the commercial embodiment of the '405 patent) and specified that its ANDA product contains the same amount of nicardipine hydrochloride, the active ingredient in Cardene. (See RW Decl., Ex. 7 at SPIL000007, 000024.) Sun's ANDA product, like Cardene, is indicated for "the short-term treatment of hypertension when oral therapy is not feasible or not desirable." (RW Decl., Ex. 7 at SPIL000049.) Sun's ANDA product is not meant for both direct injection and infusion as is claimed by the '405 patent, but instead is only suitable for infusion. Likewise, EKR's product, Cardene I.V., is meant only for intravenous administration by infusion (*i.e.* drip).

As reflected in the documentary evidence—and emphasized by Sun's counsel at oral argument—the sole difference between Sun's ANDA product in the ampul and the Cardene composition in the ampul is the amount of the non-chloride compound sorbitol included in each composition (20 mg/ml in Sun's formulation versus 48 mg/ml in Cardene). (2/17/09 Oral Arg. 48:19-49:6; *compare* RW Decl., Ex. 7 at SPIL000113, 000120 *with* RW Decl., Ex. 1 at 6:54-58, Table 2.) Sun describes the sorbitol in its nicardipine composition as a "stabilizer" for nicardipine hydrochloride and an "osmogen" to raise the tonicity of the final formulation. Thus, it is no surprise that Sun, in part, defends its '746 application as being non-infringing because it contains "60% less sorbitol than the amount EKR uses to make its commercially-available product isotonic." (EKR Br. 10.)

A brief explanation of the scientific terms is in order here. Both products require delivery of the medicine into the patients' bloodstream. To get the medicine into the bloodstream safely and effectively involves the process **osmosis**, which of necessity requires an understanding of **tonicity**. To administer the compounds safely into the bloodstream of the patient, the compound must be in a solution which is **isotonic** with the cells of the patient. That means that the concentration of solutes in the administered solution must be effectively equal to the concentration of solutes within the cells of the patient. That way, there is no net osmotic pressure on the cells of the patient, pressure that would unacceptably bloat the cells or do the opposite by collapsing them. A **hypotonic** solution would create the former problem, triggering a pathological influx of water into the cells, dangerously bloating them. A **hypertonic** solution would create a loss of water, shriveling the cells (counsel's slides illustrated this phenomenon by showing cells that looked like raisins). Either result puts the patient in pain or at risk and fails to deliver the medicine.

The goal is a solution that is **isotonic**, meaning that the solution passes safely and uneventfully through the cell membrane by osmosis. Both Cardene and Sun's ANDA product use sorbitol in the composition to achieve this desired osmotic state.

Sun's manufacturing process for its ANDA product is set forth in its application. EKR points out that Sun's ANDA follows the claimed procedure in the '405 patent by adding the nicardipine hydrochloride to a buffered solution in order to avoid precipitation of the active ingredient and maintain stability of the formulation. Thus, according to its explicit labeling, Sun's ANDA product may not be administered until a compatible intravenous fluid is added to the product. (RW Decl., Ex. 7 at SPIL000065.) The user is given instructions on infusion underneath this all-caps legend: "WARNING: AMPULS MUST BE DILUTED BEFORE INFUSION." The directions for Sun's ANDA product are identical (except for the product name) to those provided on Cardene packaging. The directions are:

> PREPARATION
> **WARNING: AMPULS MUST BE DILUTED BEFOR INFUSION**
> *Dilution:* Cardene I.V. is administered by slow continuous infusion at a CONCENTRATION OF 0.1 MG/ML. Each ampul (25 mg) should be diluted with 240 mL of compatible intravenous fluid (see below), resulting in 250 mL of solution at a concentration of 0.1 mg/mL.
>
> Cardene I.V. has been found to be compatible and stable in glass or polyvinyl chloride containers for 24 hours at controlled room temperature with:
>
> Dextrose (5%) Injection, USP
> Dextrose (5%) and Sodium Chloride (0.45%) Injection, USP
> Dextrose (5%) and Sodium Chloride (0.9%) Injection, USP
> Dextrose (5%) with 40 mEq Potassium, USP
> Sodium Chloride (0.45%) Injection, USP
> Sodium Chloride (0.9%) Injection, USP

(RW Decl., Ex. 7 at SPIL000065; *see* RW Decl., Ex. 10 at 108:11-112:23.) Sun's ANDA product, as delivered in the ampul, is hypotonic. However, Sun offers deposition testimony from a high-level employee in its formulation department, Dr. Subhas Bhowmick, that admixing of

5% dextrose or 0.9% sodium chloride would render the solution isotonic. (RW Decl., Ex. 6, Bhowmick Dep. 227:2-21.) Therefore, it can fairly be said that Sun essentially leaves out of its '746 formula enough sorbitol to keep its ANDA product hypotonic and instructs the health care provider to later render its ANDA product isotonic by adding enough dextrose or sodium chloride to create an isotonic solution. None of this appears to be in dispute.

As part of its ANDA application, Sun has compared the concentration of nicardipine hydrochloride (in the ampul) and the presence of impurities in its ANDA product with those of Cardene and found the concentration and impurities to be equal. Based upon these comparisons, Sun represents that its ANDA product "demonstrat[es] pharmaceutical equivalence" with Cardene. (RW Decl., Ex. 7, ANDA at SPIL000105.) Sun also tested the stability of its ANDA product when exposed to long-term storage, storage in elevated temperature and humidity, and light, and concluded that the buffer solution and sorbitol content stabilized Sun's ANDA product, similarly to the '405 patent formulation. (RW Decl., Ex. 7, ANDA at SPIL001015, 001017.) In addition, according to Sun's ANDA, the product also remained stable after dilution with compatible intravenous fluids, meaning that its product is comparable to Cardene for 24 hours after dilution. (RW Decl., Ex. 7 at SPIL001019-23.)

Sun also measured and reported to the FDA the tonicity of its ANDA product as related to Cardene both before and after the dilution with intravenous fluids. Sun expressed its findings in the ANDA as "osmolality," observing that the osmolality differed before the addition of intravenous fluids but became comparable following dilution. (RW Decl., Ex. 7 at SPIL001019-23; RW Decl., Ex. 11 at KRA004735-40.) Sun also undertook a biostudy on human subjects to compare its ANDA product to Cardene, and submitted the final study report to the Court. (RW

Decl., Ex. 12.) Sun represented that its ANDA product was a "bioequivalent" to Cardene when administered via intravenous infusion. (RW Decl., Ex. 12 at SPIL028453.)

The '746 application explains Sun's ANDA product as being an aqueous nicardipine hydrochloride injection composition that contains lower amounts of sorbitol than the '405 patent but does not sacrifice stability of the solution or safety. (RW Decl., Ex. 14 at 0008.) The '746 application addresses the lower amount of sorbitol than the '405 patent when it states that Sorbitol is present "in amounts sufficient to act as a cosolvent for the nicardipine hydrochloride so as to prevent its precipitation and maintain stability of the composition," but notes that "the amount of sorbitol used is not sufficient to make the composition isotonic." (RW Decl., Ex. 14 at 0021-23.) The '746 application also states that the "composition becomes isotonic" when diluted with "0.9% sodium chloride or 5% dextrose" such that the composition administered does not harm, or cause discomfort to the patient. (RW Decl., Ex. 14 at 0021-23.) EKR highlights that Sun's '746 application recognizes in its Example 2 that despite the lower tonicity of the ANDA product in the ampul, the diluted product as administered to patients "have comparable tonicity values." (RW Decl., Ex. 14 at SPIL0031.)

Sun points out that its ANDA precludes the product from being isotonic "as that term is conventionally used" (MSB Decl., Ex. 8 at SPIL033362), in particular because "healthcare providers have only one option for administration – diluting the concentrated product with a large volume of suitable fluids before slowly infusing the resulting diluted solution into a patient from an intravenous bag." (Sun. Br. 9.) In further support that its ANDA product could not infringe, Sun notes that its ANDA, as amended, precludes a '746 formulation from being created that would fall outside of the osmotic pressure range of 80 and 140 mOsm in the ampul. (Pls.' SOF at ¶ 35.) Sun also contends that by adding "large volumes" of liquid to render Sun's ANDA

product isotonic, the concentration of nicardipine hydrochloride is reduced from 2.5 mg/ml to 0.1 mg/ml, which Sun claims is 90% below the "at least 1 mg/ml nicardipine hydrochloride" concentration required by the asserted claims. (MSB Decl., Ex. 5 (12/15/2007 Labeling Am.) at KRA004555; *see also* Sun Br. 22.) Thus, Sun's arguments supporting non-infringement rest on the fact that (1) its product *in the ampul* is hypotonic, not isotonic, due to a lower amount of sorbitol, and (2) the fluids *added to the ampul-contained composition prior to administration* dilute nicardipine hydrochloride to a point where the concentration of the active ingredient is well below the minimum 1 mg/ml to be covered by the claims.

The details of Sun's product are not in dispute. The conspicuous absence of material issues of disputed fact suggests that nothing prevents the Court from deciding the summary judgment cross-motions at this juncture. (*See* 2/17/2009 Oral Arg. 75:17-19 (Plaintiff's counsel stating, "We do think that this is a case that is susceptible to summary judgment either for or against us, there's really nothing but legal issues left.").)

IV. Analysis

In this patent infringement analysis, the Court first will weigh the parties' arguments on claim construction and construe the one disputed claim term. Second, the Court will consider whether either party is entitled to summary judgment as to infringement.

A. Claim Construction

Patents are composed of two parts: the specification and the claims. *Wyeth v. Lupin LTD*, 579 F. Supp. 2d 711, 715 (D. Md. 2008). In analyzing a patent, it is "a bedrock principle . . . that the claims of a patent define the invention to which the patentee is entitled the right to exclude." *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005). In the '405 patent, the claims are preceded by descriptions of the patent. This is called the specification portion of a

patent, which "contains a written description of the invention that must enable one of ordinary skill in the art to make and use the invention," and can be used as a glossary in understanding the terms used. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995). "The written description part of the specification," however, "does not delimit the right to exclude," as excluding others is the "function and purpose of [patent] claims." *Id.* at 980.

The sole dispute on claim construction for the '405 patent is the meaning of the term "isotonic" in claims 1-4. At issue is whether the term "isotonic" should be defined in its "conventional sense" to mean "compatible with body fluids," as EKR contends, or defined as a specific range of osmotic pressure as "corresponding to that of body fluids, approximately 275-300 mOsm/L," as advanced by Sun. Sun focuses on the '405 patent's reference to Remington's Pharmaceutical Sciences ("Remington's"), which explicitly sets forth a range of 275-300 mOsm/L. Thus, EKR argues for a definition based on physiological compatibility with bodily fluids whereas Sun seeks to add an osmotic pressure limitation imported from Remington's.

With regard to the definition of "isotonic," the '405 patent states:

> The term "isotonic" is used in its conventional sense, as is described in "Remington's Pharmaceutical Sciences," Mack Publishing Company, Easton, Pa., 1985, Chapter 80, page 1455 et seq., especially page 1456, left column, 60 lines 24-33, to mean a fluid corresponding to body fluids including blood and lacrimal fluid, normally having an osmotic pressure which is often described as corresponding to that of a 0.9% solution of sodium chloride.

('405 Patent, Col. 3, ll.56-64.) The Federal Circuit in *Phillips* teaches that the "'ordinary meaning' of a claim term is its meaning to the ordinary artisan after reading the entire patent," 415 F.3d at 1421, and that the Court should primarily consider the intrinsic evidence, including the claims, specification and prosecution history. 415 F.3d at 1312-17. Extrinsic evidence is considered less reliable in that it risks taking the meaning out of the patent specification's context and placing it into the abstract. *Id.* at 1318. The Federal Circuit in *Phillips* offers several

reasons for the lesser importance of extrinsic evidence, the most relevant being that "extrinsic evidence by definition is not part of the patent and does not have the specification's virtue of being created at the time of patent prosecution for the purpose of explaining the patent's scope and meaning." *Id.*

Sun argues for construction based upon the specific osmotic pressure ranges set forth in Remington's, which is referenced in the '405 patent. ('405 patent, col. 3, l. 58.) Despite the explicit reference to Remington's, only the text of the patent can be considered intrinsic. The text of the patent, however, does not set forth specific osmotic ranges; those are found only by opening Remington's, which constitutes extrinsic evidence for purposes of a patent analysis. The '405 patent's claims embrace parenteral administration by injection or infusion of isotonic solution in mammals generally, including cattle, horses, and sheep, as well as human beings. While the '405 patent claims cover both infusion and injection, Sun's accused product can only be administered by infusion, and only after being rendered isotonic (because it would otherwise be potentially harmful if directly injected). Sun argues that its product is "50% below" the isotonic limitation—and is hypotonic—as formulated. But this argument assumes that isotonicity lies within the range of 275-300 mOsm/L. Before Sun's accused product in the ampul could ever be administered, it must necessarily be infused with fluids for intravenous drip, which alters the tonicity. Since the '405 patent covers administration to mammals, restricting a definition of the term "isotonic" to a specified osmolality range amenable to humans (as referenced in Remington's) does not make sense. Accordingly, the Court must reject Sun's construction of the term "isotonic" because it relies on ranges at the expense of capturing the variable meaning of isotonic depending on the situation.

The truer definition under *Phillip*'s guidance is one that adheres to the intrinsic evidence contained in the '405 patent, covering isotonic's "conventional" meaning, which, according to the '405 patent, "mean[s] a fluid corresponding to body fluids including blood and lacrimal fluid." Moreover, extrinsic evidence would support a claim construction favorable to EKR's definition of compatibility with bodily fluids because even Remington's conveys that isotonicity relates to a qualitative "physiologic compatibility" and cannot be pinned down to a specific range of osmotic pressure. On the same page of Remington's as is referenced in the '405 patent, the treatise states: "isotonicity infers a sense of physiologic compatibility where isoosmoticity need not." (RW Decl., Ex. 16, Remington's, at 1456.) Dr. Bhowmick's testimony concerning the definition of "isotonic," which supports EKR's preferred construction, is in agreement, even though he is Sun's witness:

> Q. I see. When you say "isotonic," what do you mean by that?
> A. It's – isotonicity, same as the physiological solutions.
> Q. So compatible with body fluid?
> A. Yes

(Bhowmick Tr. 63:11-16.)

EKR's definition for "isotonic" with respect to the '405 patent is more in keeping with the plain and ordinary reading of the patent language. The '405 patent did not mean to define isotonic as a particular range of osmotic pressure because isotonicity will change as necessary, whether a sheep, horse, or human is the subject for administration.

The Court construes isotonic as meaning "compatible with body fluids."

B. Summary Judgment Motions Regarding Infringement

Two motions have been made: a motion for summary judgment of non-infringement by Sun, and a cross-motion for summary judgment of infringement by EKR. In this opinion the Court will decide both.

1. Whether to Decide Infringement by Strict ANDA Terms or by the Realities of the Product

In this patent suit, EKR carries the burden of proving that Sun's ANDA product infringes claims 1-4 of the '405 patent. *Bayer AG v. Elan Pharm. Research Corp.*, 212 F.3d 1241, 1247 (Fed. Cir. 2000). The analysis of whether an ANDA product infringes a patent depends on the contents of the ANDA where "an ANDA specification defin[es] a proposed generic drug in a manner that directly addresses the issue of infringement," and in only those situations will ANDA specifications "control the infringement inquiry." *See Abbott Labs. v. TorPharm, Inc.*, 300 F.3d 1367, 1373 (Fed. Cir. 2002). Relying on *Abbot Labs*, Sun argues that the Court's inquiry must be limited strictly to the specifications set forth by Sun in its ANDA in determining infringement. (Sun Br. 12-13.) EKR, on the other hand, urges an infringement analysis that takes into account the whole of the accused product, consisting of the packaging, the vial, and the product label. (EKR Br. 29-31.) Thus, EKR argues that the Court "must focus on what the ANDA applicant will likely market if its application is approved, an act that has not yet occurred." *Glaxo, Inc. v. Novopharm, Ltd.*, 110 F.3d 1562, 1569 (Fed. Cir. 1997).

EKR's view is more persuasive because the thrust of EKR's theory of infringement is that Sun's ANDA product infringes at the point when it is administered to the patient, despite the fact that the product may not be infringing in the ampul. Thus, while Sun may vigorously contend that the ANDA process and compounds must be controlling to the exclusion of the reality of the contemplated ANDA product's use, that does not comport with the reality of the

product that would ultimately spring from the '746 application. The *Abbot Labs* precedent concerning a strict reliance on the ANDA content is not applicable here because the ANDA specification *does not* "directly address the issue of infringement," which is the changing of Sun's product to be isotonic before it ever becomes useable.

Paragraph IV specifically requires ANDA filers to certify that "manufacture, *use*, or sale of the new drug" will not infringe on the pre-existing patented drug. *See* 21 U.S.C. § 355(j)(2)(A)(vii)(IV) (emphasis added). Accordingly, the Court must look to the whole of the product, which means considering its ultimate *useable state*, as well as the ANDA-contemplated process and compound. *See Glaxo Inc.*, 110 F.3d at 1569 ("[A] district court's inquiry in a suit brought under § 271(e)(2) is the same as it is in any other infringement suit, whether the patent in question is invalid or will not be infringed by the manufacture, use, or sale of the drug for which the [ANDA] is submitted." (internal citation and quotation omitted)).

2. Infringement Analysis

There are two means of proving patent infringement. Literal infringement can be found if the accused product contains every claim limitation as outlined in the subject patent. *Union Carbide Chem. & Plastics Tech. Corp. v. Shell Oil Co.*, 425 F.3d 1366, 1373 (Fed. Cir. 2003). Infringement can also be established by way of the "doctrine of equivalents" where copyists "evade liability for infringement by making only insubstantial changes to a patented invention." *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 727 (2002). Under the doctrine of equivalents, infringement requires that the accused product contain each limitation of the claim or an equivalent, which would mean only "insubstantial differences" exist between the patented and accused product. *Leggett & Platt, Inc. v. Hickory Springs Mfg. Co.*, 285 F.3d 1353, 1358-59 (Fed. Cir. 2002).

i. Literal Infringement

At oral argument, Sun's counsel suggested that the parties' dispute is focused on the doctrine of equivalents because Sun's product is not infringing in a literal sense:

> I take it [the Court] glean[s] this from the briefs in [the Court's] comment a few minutes ago, but literal infringement is off the table . . . it is now undisputed that [Sun] does not literally infringe this patent. Our concentrate product doesn't literally infringe because it is not isotonic. Our diluted product does not infringe because it's not concentrated.

(*See* 2/17/2009 Oral Arg. 47:18-25.) However, EKR did not abandon its assertion of literal infringement. Indeed, at oral argument, EKR's counsel asserted that all elements of the '405 patent's claim 1 were present in Sun's ANDA product. (2/17/2009 Oral Arg. 77:5-11.)

Picking up on that argument, claim 1 would be infringed by the ANDA product because it has both a nicardipine concentration of minimally 1 mg/ml and the presence of an adequate non-chloride compound to render it isotonic. But Sun's ANDA delegates the final infusion of liquids to a health care provider, which avoids an isotonic state in the ampul and results in a non-infringing nicardipene concentration in the as-administered state. *Compare* '405 patent, col. 10, ll. 35-60 *with* (MSB Decl., Ex. 5 (12/15/2007 Labeling Am.) at KRA004555).

Sun acknowledges that once the health care providers dilute its ANDA product, it will become isotonic, but argues that "the large volume of fluid also takes the concentration of nicardipine hydrochloride well below the required 'at least 1 mg/ml' concentration." (Sun Br. 15.) That concentration is lower than the 1 mg/ml floor within the '405 patent claim. (MSB Decl., Ex. 5 (12/15/2007 Labeling Amendment) at KRA004555.) However, despite this distinction in nicardipine concentration after dilution, Sun admitted at oral argument that its ANDA product is "delivered to the body at the same rate" as the '405 patent's commercial embodiment. (2/17/2009 Oral Arg. 48:20.)

Sun wants the Court to consider its tonicity *before* dilution and its nicardipine concentration *after* dilution. On this score, Sun's arguments are inconsistent and fail to demonstrate why its product does not literally infringe at the point of administration.

ii. Applying the Doctrine of Equivalents

Two tests are available to measure equivalence: the "function-way-result test" and the "insubstantial differences test." *Voda v. Cordis Corp.*, 536 F.3d 1311, 1326 (Fed. Cir. 2008). "Under the insubstantial differences test, '[a]n element in the accused device is equivalent to a claim limitation if the only differences between the two are insubstantial.'" *Id.* (quoting *Honeywell Int'l Inc. v. Hamilton Sundstrand Corp.*, 370 F.3d 1131, 1139 (Fed. Cir. 2004)). "Under the function-way-result test, an element in the accused device is equivalent to a claim limitation if it 'performs substantially the same function in substantially the same way to obtain substantially the same result.'" *Id.* (quoting *Schoell v. Regal Marine Indus., Inc.*, 247 F.3d 1202, 1209-10 (Fed. Cir. 2001)). The phrasing of the test applied for equivalence can vary depending on the particular facts of a case, *Voda*, 536 F.3d at 1326, "because different linguistic frameworks may be more suitable to different cases, depending on their particular facts." *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 493 F.3d 1368, 1377 (Fed. Cir. 2007). As the Federal Circuit noted in *Festo*, "[t]he Supreme Court in *Warner-Jenkinson Co. v. Hilton Davis Chemical Co.*, 520 U.S. 17 (1997), considered whether the test for the doctrine of equivalents should be the 'insubstantial differences' test or the 'triple identity' test, which focuses on 'the function served by a particular claim element, the way that element serves that function, and the result thus obtained by that element. The Court declined to choose one test[.]" *Festo*, 493 F.3d at 1376 (internal citation omitted)).

The doctrine of equivalents prevents individuals from "practic[ing] a fraud on a patent." *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605 (1950). "The language in the patent claims may not capture every nuance of the invention or describe with complete precision the range of its novelty. If patents were always interpreted by their literal terms, their value would be greatly diminished." *Festo*, 535 U.S. at 731. As the *Graver Tank* Court taught, "to permit imitation of a patented invention which does not copy every literal detail would be to convert the protection of the patent grant into a hollow and useless thing," which would raise form over substance. *Graver Tank*, 339 U.S. at 607.

"What constitutes equivalency must be determined against the context of the patent, the prior art, and the particular circumstances of the case." *Abraxis Bio-Science, Inc. v. Mayne Pharma (USA) Inc.*, 467 F.3d 1370, 1380 (Fed. Cir. 2006). The Federal Circuit instructs that "[e]quivalence, in the patent law, is not the prisoner of a formula and is not an absolute to be considered in a vacuum." *Id.*

In making its case for infringement under the doctrine of equivalence, EKR argues that the accused product consists of the packaging, the vial, and the product label. (EKR Slide 47.) The Court agrees. The statutory framework for new drug applications reflect the importance of drug labeling, as shown in 21 U.S.C. § 355(b)(1), which requires that drug applications must include "specimens of the labeling proposed to be used for such drug." Courts have relied upon the labeling of drugs to support a conclusion that patents have been infringed. *See, e.g.*, *Ranbaxy Labs. Ltd. v. Abbott Labs.*, No. 04-cv-8078, 2005 WL 3050608, *23 (N.D. Ill. Nov. 10, 2005) ("This Court, however, finds that [the drug] infringes under the doctrine of equivalents and the plain language of its proposed label."); *Purdue Pharma L.P. v. Boehringer Ingelheim GmbH*, 98 F.Supp.2d 362, 378 (S.D.N.Y. 2000) ("[T]he Roxane Package Insert states, 'For control of

severe chronic pain in patients, this drug should be administered on a regularly scheduled basis, every 12 hours.' On these bases, the Court finds that Roxicodone SR satisfies the final limitation of Claim 2 of the '912 patent.").

The most compelling indicator that the labeling instructions belong in the infringement analysis here is that in the course of its *in vivo* study for FDA approval, Sun chose to compare its proposed ANDA product to Cardene only *after* dilution of its drug with compatible intravenous fluids as set forth on the product labeling. (RW Decl., Ex. 12 at SPIL028453.) Sun used this study as basis for its assertion that its ANDA product and Cardene were bioequivalents. (RW Decl., Ex. 12 at SPIL028453.) Sun has relied upon the point just before administration to the patient, not on its manufactured product, as the critical point for FDA approval and safety studies.

The key instruction in the ANDA product labeling is that healthcare providers mix the composition as packaged in the ampul with any of six compatible isotonic intravenous fluids before administration by intravenous infusion. (RW Decl. Ex. 7 at SPIL000065-66, 000089). Because Sun has incorporated this instruction into its ANDA to the FDA, the instruction is indivisible from any commercial embodiment of the ANDA or the '746 application. (*See* RW Decl. at SPIL000020, 000074.) Sun's '746 application specifically states that "upon dilution with 0.9% sodium chloride or 5% dextrose, the composition becomes isotonic, so that the final composition which is administered to the patent does not cause irritation." (RW Decl. Ex. 14 at 0021.) The addition of a non-chloride compound as a diluent, such as 5% dextrose, coupled with the existing 20 mg/ml of sorbitol in Sun's ampul composition, results in an isotonic composition.

It appears that the function-way-result test is best suited for determining whether the existing sorbitol in Sun's ANDA product combined with instructions for further dilution with

non-chloride compounds by the health care provider are, together, the equivalent of the '405 patent. "[U]nder the function-way-result test, an element in the accused device is equivalent to a claim limitation if it performs substantially the same function in substantially the same way to obtain substantially the same result." *Voda*, 536 F.3d at 1326 (internal citations and quotations omitted).

To apply the function-way-result test to the accused product, the limitation contained in claims 1 and 3 of the '405 patent must be examined because those claims indicate how the '405 patent's commercial embodiment achieves its isotonicity. The limitation in the '405 patent's claims 1 and 3 is articulated as a "non-chloride compound selected from saccharides, including sorbitol, mannitol, dextrose and glucose, and non-saccharides, including polyethylene glycol and glycerol, in an amount effective to render the pharmaceutical composition isotonic." ('405 patent, claims 1(b) & 3(a).)

Sun's ANDA product has the combination of sorbitol and instructions for addition of non-chloride compound in diluting fluids as part of its composition as administered to the end-user. In both the '405 patent and the '746 application, the function of the non-chloride compound is to stabilize the active ingredient, nicardipine hydrochloride, and to raise the tonicity of the composition for intravenous infusion. (*See* RW Decl., Ex. 1 at 3:53-64, 4:9-25.) Sun's ANDA product in the ampul contains 20 mg/ml sorbitol, which serves to stabilize the nicardipine hydrochloride and increase the tonicity. (*See* RW Decl., Ex. 20 at Claim 1, Section J.) Sun's ANDA recognizes the functions of the sorbitol as a "stabilizer" and an "osmogen." (RW Decl., Ex. 7 at SPIL000118.) The '746 application further describes the stability function of sorbitol in its proposed ANDA product. (RW Decl., Ex. 14 at 0021, 0023.) Critically, Sun's ANDA product is not useable without the further addition of a non-chloride compound in a dilution

process undertaken by the health care provider. Thus, per the product labeling, mixing in a non-chloride compound prior to administration serves the function of increasing tonicity to a point where Sun's ANDA product is safe for administration. (*See* RW Decl., Ex. 20 at Claim 1, Sec. K.) Together, the sorbitol in Sun's ANDA product in the ampul and the additional non-chloride compound added by the health care provider has the function of stabilizing the active ingredient and raising tonicity. The presence of sorbitol in Sun's composition and the instructions for a dilution process perform the same function as the non-chloride compound recited in the '405 patent claim limitations.

Applying the second part of the function-way-result test requires examining how the non-chloride compound increases the tonicity of the pharmaceutical composition. In the '405 patent, the claims raise tonicity in the nicardipine composition by increasing the amount of solutes dissolved in the solution. (RW Decl., Ex. 1 at 3:53-64, 4:6-9; TF Ex. 1 at ¶¶114-119, 160, 185.) In much the same way, the sorbitol existing in Sun's ANDA product and the dextrose (or similar non-chloride compound) added to Sun's composition both increase tonicity by raising the amount of solutes dissolved in the solution. (TF Ex. 1 at ¶¶161, 186; RW Ex. 20 at Claim 1, Sec. J-K.)

The result obtained by the non-chloride compound in the '405 claims is that the pharmaceutical composition becomes isotonic. (RW Decl., Ex. 1 at 10:54-60, 11:1-6.) Likewise, the result of the sorbitol and dextrose (or similar non-chloride compound) added to Sun's product is that Sun's ANDA product is rendered isotonic. (TF Ex. 1 at ¶¶ 163, 188; RW Ex. 20 at Claim 1, Secs. J-K.) The same result is reached in both Sun's ANDA process and the '405 patent's process.

That Sun's ANDA product requires a final step by health care providers does not change the result portion of the function-way-result analysis: the same result is reached by both the '405 patent and Sun's ANDA product. EKR addresses that final, indispensable step in part by loosely theorizing that Sun's ANDA product induces the health care providers to infringe. "Under section 271(b), '[w]hoever actively induces infringement of a patent shall be liable as an infringer.'" *DSU Med. Corp. v. JMS Co.*, 471 F.3d 1293, 1305 (Fed. Cir. 2006)(quoting 35 U.S.C. § 271(b)). "To establish liability under section 271(b), a patent holder must prove that once the defendants knew of the patent, they 'actively and knowingly aid[ed] and abett[ed] another's direct infringement." *Id.* (quoting *Water Technologies Corp. v. Calco, Ltd.*, 850 F.2d 660, 668 (Fed. Cir. 1988)). However, per the discussion in Section IV.B.1, the Court can determine infringement in terms of how the accused product will be used, and so the Court need not rely upon inducement-to-infringe principles to establish infringement by Sun's ANDA product. The Court's analysis centers on the ANDA product as its point of administration, and for the reasons stated above, each specification in Sun's ANDA product is the same or the equivalent of those limitations set forth in the '405 patent's claims 1-4.

3. Sun's Argument that EKR is Estopped from Raising the Doctrine of Equivalents

Notwithstanding all of the above, according to Sun the Court may not apply the doctrine of equivalents on an estoppel theory. Sun asserts that the prosecution history of the '405 patent establishes that EKR added the limitation of "at least 1 mg/ml" for nicardipine hydrochloride concentration during the '405 patent's prosecution in order to overcome a patentability rejection, which Sun argues would preclude application of the doctrine of equivalents because "a patentee may not write narrow claims for allowance by the PTO and subsequently attempt to broaden the

claims in court by using the doctrine of equivalents." *PSC Computer Prods., Inc. v. Foxconn Int'l, Inc.*, 355 F.3d 1353, 1357 (Fed. Cir. 2004).

Thus, Sun argues for estoppel on the grounds that application of the doctrine of equivalents would improperly read the 1 mg/ml limitation out of the '405 patent and that EKR's limitation of the claimed invention to a higher concentration product precludes its ability to expand the scope of the '405 patent's claims. Sun contends that a claim of infringement via equivalence is barred wherever the disputed claim limitation is imposed as a "narrowing amendment" to overcome patentability rejections. Sun therefore argues that the 0.1 mg/ml concentration of nicardipine hydrochloride in Sun's *diluted* ANDA product cannot be considered an "insubstantial difference" from the minimum of 1 mg/ml called for in the '405 patent's claim limitation. Under that line of reasoning, the doctrine of equivalents would not be available to EKR because any variation from the 1 mg/ml concentration level required by the '405 patent could never be considered "insubstantial" due to EKR having imposed the 1 mg/ml limit to overcome patentability objections.

EKR undercuts Sun's estoppel argument by pointing to Sun's "flawed assumption" that the composition in question is the *diluted* form of Sun's ANDA product created by the health care provider prior to administration (after the admixing of Sun's product in the ampul with intravenous fluid). EKR is correct that Sun cannot conveniently choose when its ANDA product will be judged by the as-administered composition or, alternatively, by the ampul product. As is plainly set forth in its ANDA, Sun's product in the ampul contains 2.5 mg/ml of the active ingredient nicardipine hydrochloride, and the final step Sun requires of healthcare providers to achieve isotonicity cannot simultaneously be considered to produce a diluted final product that

successfully avoids infringement on nicardipine concentration. (*See* RW Decl., Ex. 7 at SPIL000120.)

The fact that Sun's product in the ampul is *literally* well within the '405 patent's limitation in claims 1 and 3 of a concentration of "at least" 1 mg/ml of nicardipine hydrochloride cannot seriously be disputed. Sun's final step of diluting the ANDA product for isotonic administration has been found under the doctrine of equivalents to involve the same function, the same way, and the same result as the process and product obtained in the '405 patent, thereby infringing it. Sun's product in the ampul infringes on the "at least" 1 mg/ml concentration limitation completely independently of Sun's final step that obtains isotonicity in Sun's ANDA product. Sun's final and infringing step, as required by its product labeling, cannot absolve Sun of infringement on the basis that nicardipine concentration falls below 1 mg/ml. (*See* RW Decl., Ex. 24 at 13-14, 22, RW Decl., Ex. 20 at Claim 1, Sec. I.)

Indeed, EKR need not—and does not—rely on the doctrine of equivalents with regard to infringement on the nicardipine concentration limitation. This is because, with respect to the nicardipine concentration specification, Sun's ANDA product literally infringes *in the ampul* with a concentration of 2.5 mg/ml. For that reason, the prosecution history of the '405 patent is irrelevant to the Court's infringement analysis.

The Court also rejects Sun's argument that EKR attempts to "equitably expand" the term "isotonic" to cover "hypotonic" so that the "isotonic" limitation would be erased. (*See* EKR Br. 17 n.2.) Sun attempts to draw on precedent suggesting that opposites cannot be determined equivalents to each other as in the case of, among others, "mounted" and "unmounted," "minority" and "majority," and "metallic" and "nonmetallic." (*See* Sun Br. 17 n.2 (citing *Asyst Techs., Inc. v. Emtrak, Inc.*, 402 F.3d 1188, 1192 (Fed. Cir. 2005); *Moore USA, Inc. v. Standard*

Register Co., 229 F.3d 1091, 1106 (Fed. Cir. 2000); *SciMed Life Sys. v. Advanced Cardiovascular Sys.*, 242 F.3d 1337, 1345-47 (Fed. Cir. 2001).) This is a straw-man argument. EKR does not argue that hypotonic should be equated with isotonic but that in Sun's design, the isotonicity of its product as-administered is equivalent to the EKR's product's isotonicity as manufactured. Sun's authority does not involve the unique circumstance presented here where the accused product in conjunction with its instructions for use are the equivalent to a commercial embodiment of the asserted '405 patent, something to which Sun has admitted in the course of its FDA approval process. (RW Decl., Ex. 12; RW Decl., Ex. 12 at SPIL028453, RW Decl., Ex. 6 at 57:18-58:2, 98:5-12, 265:21-270:23.) Further, it is of no moment that Sun's ANDA product aims to do in two steps (the 20 mg/ml of sorbitol and the health care provider's final step) what the '405 patent does in one step (the presence of 48 mg/ml in Cardene, the '405 patent's commercial embodiment). *See, e.g.*, *Eagle Comtronics, Inc. v. Arrow Comm'n Labs., Inc.*, 305 F.3d 1303, 1317 (Fed. Cir. 2002) (stating "one-to-one correspondence of components is not required").

Sun argues that the doctrine of equivalents is unavailable to EKR because its claimed invention in '405 is intentionally narrow, and is limited to concentrated isotonic formulations, relying on Federal Circuit precedent holding that if a patent could have been claimed more broadly, but was intentionally claimed narrowly, then the doctrine of equivalents should not be available to protect the innovation because it risks robbing patents of the "meaningful structural limitations." *See Sage Prods., Inc. v. Devon Indus., Inc.*, 126 F.3d 1420, 1424 (Fed. Cir. 1997). Sun contends that the '405 patent was drafted to focus narrowly on a "dual option" formulation that would be suitable for direct intravenous injection from the ampul as well as via intravenous drip after mixture with compatible fluids.

EKR responds convincingly to these arguments. The '405 patent has no limitation governing when the composition must be administered or mandating that the administration must be possible both by intravenous drip and injection, as illustrated by Cardene, which is FDA approved for only intravenous infusion. Thus, there is no indication that the '405 inventors deliberately narrowed their patent to exclude a process like the one creating Sun's ANDA product, which delays the final tonicity adjustment to the point just before administration. Indeed, not unlike the Sun ANDA developers, the '405 inventors aimed to create a formulation that would be isotonic at the point of administration and maintain its solubility of active ingredient.

Sun also contends that EKR espouses too wide a view of the doctrine of equivalents—which Sun asserts was designed to only capture "trivial differences"—and urges the Court to find the doctrine of equivalents too narrow to apply here. Sun argues that courts have strictly construed the doctrine of equivalents, and that its application must be "the exception . . . not the rule." (Sun Br. 18 (quoting *London v. Carson Pirie Scott Co.*, 946 F.2d 1534, 1538 (Fed. Cir. 1991).) Sun also relies on public policy arguments that competitors would not generally be able to rely upon patent limitations if the doctrine of equivalents became too broadly applied. The Court concludes the correct view is that the doctrine of equivalents is suited to the situation presented here, where the final step is consigned to the health care provider. In a decision in which it declined to announced the "death" of the doctrine of equivalents, the Supreme Court reasserted its earlier precedent, stating

> What constitutes equivalency must be determined against the context of the patent, the prior art, and the particular circumstances of the case. Equivalence, in the patent law, is not the prisoner of a formula and is not an absolute to be considered in a vacuum. *It does not require complete identity for every purpose and in every respect. In determining equivalents, things equal to the same thing may not be equal to each other and, by the same token, things for most purposes*

> *different may sometimes be equivalents*. Consideration must be given to the purpose for which an ingredient is used in a patent, the qualities it has when combined with the other ingredients, and the function which it is intended to perform. An important factor is whether persons reasonably skilled in the art would have known of the interchangeability of an ingredient not contained in the patent with one that was.

Warner-Jenkinson Co., 520 U.S. at 25 (emphasis added) (quoting *Graver Tank*, 339 U.S. at 609).

4. Sun's ANDA Product Infringes the '405 Patent

The singular act of diluting Sun's ANDA product renders it isotonic and also dilutes its concentration below that of the '405 patent. There is no independent reason for Sun's ANDA product (in its diluted state) to have a lower concentration of nicardipine hydrochloride other than to not encroach upon the '405 patent's claims. Sun's counsel unequivocally admitted the two-fold impact of the infringement-circumventing final step taken by the healthcare provider at oral argument: "We of course instruct health care providers to turn our hypotonic product into an isotonic before administration. But when we do that, of course, we turn it into the diluted product." (2/27/2009 Oral Arg. 108:22-25.)

Sun cannot avoid infringement on two grounds in one step taken by health care providers. Sun infringes the '405 patent under the doctrine of equivalents on the grounds of an isotonic state obtained by health care provider in the administration process, a process that the Court concludes to have been designed to avoid infringement. There is no force to the argument that nicardipine concentration must be weighed after dilution, rather than by its composition in the ampul such that nicardipine concentration incidentally falling below the 1 mg/ml point at the time of dilution saves Sun's ANDA product from infringing the '405 patent. Having weighed the function, way, and result of Sun's ANDA product in relation to the '405 patent's limitations, and having determined the elements in Sun's ANDA product to be the same or the equivalent of the '405 patent's limitations, the Court does not discern anything but insubstantial differences between

what Sun aims to do in delaying the rendering of its composition isotonic (*i.e.* assigning that task to an end-user's health care professional) and the '405 patent's isotonic product in the ampul.

V. CONCLUSION

EKR has carried its burden of proving infringement of the '405 patent by Sun's ANDA product. Accordingly, the Court grants summary judgment of infringement of the '405 patent in favor of EKR, and denies Sun's motion for summary judgment of literal non-infringement. An appropriate order will be entered.

/s/ Katharine S. Hayden
Katharine S. Hayden, U.S.D.J.

Dated: March 31, 2009